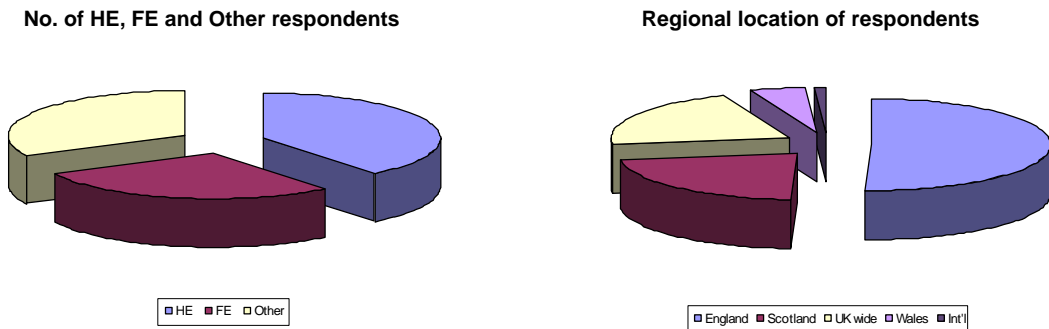


JISC Draft Strategy 2010-2012: Analysis of Responses to the Consultation

0. Introduction

- 0.1. This report is the summation of responses from the JISC draft strategy 2010-2012 consultation, plus Annex B on page 33 contains relevant feedback from the 2009 National Student Survey.
- 0.2. JISC has received 84 formal responses to the draft strategy plus a further 95 comments from the Write to Reply website. The responses represent views from HE, FE, committee members, UK-wide and regional organisations, individuals, JISC's funders, and one international response. The split between HE, FE and other respondents, as well as their regional location, is illustrated below. A list of formal respondents can be found at Annex A to this report on page 32. (Individual responses are not included in the geographical information as they do not represent a particular institution.)



- 0.3. The following analysis is organised in the structure of the formal consultation form provided on the JISC website. Further responses from the Write to Reply website have been inserted appropriately. The final section on general comments has been broken down to follow the structure of the draft strategy document itself.

1. Do you feel that the priority investment areas outlined will help JISC achieve its objectives set out in the strategy? If not, which areas do you disagree with and why?

- 1.1. The majority of respondents agree that the priorities outlined are appropriate and relevant, with some need for further definition and a cross-check against existing activities already delivering to them. However, from an FE perspective, one respondent felt that the financial flexibility and institutional contributions of FE colleges will be severely restricted by these priorities. FE colleges feel that scholarly activity will become more important in FE and their requirements in this area therefore need to be taken into account. Other FE respondents commented generally that there should be greater and clearer acknowledgement of the FE sector throughout the strategy, and its expertise in pedagogy across a wide range of learner contexts. This includes clarity of responsibilities in this sector (JISC, Becta¹, LSIS²), and further references to

¹ <http://www.becta.org.uk/>

² <http://www.lsis.org.uk/LSISHome.aspx> (Learning and Skills Improvement Service)

Harnessing Technology³, the national technology strategy for education and skills.

- 1.2. More widely, it was felt it would be beneficial for the strategy to contain an indication of how it links to the wider information systems community, such as those services provided regionally by the National Health Service and local government. Similarly, one respondent had a concern that the four priority areas as focussed, may lead to approaches, tools and services that inadvertently provide obstacles to working with partners outside the UK HE and FE sectors, e.g. commercial. A number of respondents felt that the significance of the business and community engagement agenda needed greater emphasis in the strategy, as did the area of more efficient and effective business processes, and shared infrastructure and services.
- 1.3. One HE respondent felt that there needs to be greater emphasis on return on investment rather than just investment itself. This would help to create the drive to change the culture in HE to achieve the objectives set out. Although the current economic climate demands that return on e-learning investment be demonstrated in the short to medium term, a number of respondents are concerned that the apparent focus on this timeframe may impede progress in major areas where development is needed in the medium to long term, particularly in the learning and teaching area. However, the “beyond the horizon” activities appear to be vague, and their relationship with the “here and now” activities needs to give a greater sense of ‘creating the future’.

Timeframes

- 1.4. Another HE respondent remarked that, for their institution particularly, some of the 2-5 year activities were of more immediate concern, e.g. information literacy, interoperability of research data across institutions with standards, and efficiency and cost-effectiveness of ICT. This is a general feeling echoed by a number of the respondents. Similarly, one respondent felt that some of the work highlighted in the columns is not sufficiently defined or explained in terms that stakeholders will understand.
- 1.5. One respondent felt that the strategy could be reviewed annually to explore the case for re-focussing some funding on longer-term initiatives as the economic, demographic and technical environments change. Another respondent highlighted that the three investment timeframes overlapped somewhat and suggested that ‘here and now, 2-5 years and 5-15 years’ might be a more appropriate spectrum, particularly when looking at major commitment for longer range strategies and concepts.
- 1.6. It was felt by one HE respondent that the JISC project lifecycle is too slow and that by the time projects had reported they were often already implementing the technologies. They felt that ‘loose dynamic collaboration’ (e.g. through the UCISA Directors list) had been much more effective, allowing them to identify institutions doing similar work.
- 1.7. One HE respondent felt that technology-rich learning spaces could feature more heavily within the priority investment areas, e.g. libraries and lecture spaces moving from a place where you ‘access/receive’ information to being a place where you ‘exchange’ information – “learning spaces 2.0”.

³ <http://publications.becta.org.uk/display.cfm?resID=37348&page=1835>

Additional areas of focus

- 1.8. It was observed by one HE respondent that in order to deliver on its strategy JISC will need to build networks beyond the ICT/library arena and into those managing the research process, such as research managers and administrators. Universities are increasingly recognising that there are many other metrics needed to measure outputs and quality, and to enable them to benchmark themselves. Many of these metrics are managed in research offices or planning offices rather than libraries.
- 1.9. One respondent was concerned that the objective to provide shared national services may invoke unrealistic expectations that JISC will be able to deliver an ever increasing range of central services. Shared services, developed and managed by the sector, however, would offer an opportunity to optimise resources and it was felt JISC should be actively engaged in supporting these collaborative-based services. Shared infrastructure and resources could therefore usefully be seen as a facilitator for the other priorities rather than an objective in itself.
- 1.10. One respondent commented that, overall, there needs to be more specific information in the priority investment areas to get more of a sense of what JISC will actually do, and to get some indication of the relative future investment in these activities.
- 1.11. The National Archives welcomed the clarity of the priorities outlined but wanted to see greater articulation about the relationships between the different areas. They commented that one of JISC's strengths was its focus on both IT and information content but they recognised that JISC could not do everything by itself. It would therefore be helpful if JISC could work with partners to develop a clearer strategy on providing a critical mass of digital content. More benefit could potentially be added by focussing digitisation in common ways. They also felt that digital preservation should be given a greater focus in the strategy, and that JISC should address the issue of cataloguing content, or creating metadata, as well as developing technical standards to support exchange, i.e. be more user-led. Another respondent also welcomed the idea of JISC promoting appropriate and effective standards for digitisation and digital preservation.
- 1.12. A number of respondents commented on the need for leadership and guidance in the area of open source and open standards, and felt that this should be part of JISC's role. JISC also has a role in identifying and importing best practice, trialling it in a UK environment, and sharing it internationally, e.g. digitisation, and it was felt that this needed to come across more strongly in the strategy. The 'Our World/Context' section would benefit from more of an analysis of the international landscape.

Investment

- 1.13. In terms of funding, it was felt that further transparency is needed on how JISC decides *how much* to invest in each of the priority areas (who decides on funding allocations, how is feedback obtained about the relevancy of projects to institution). This currently appears to be a source of confusion for the community. Mention could also be made of how the current planned investment in each area is envisaged to change during the period 2010-2012. One respondent felt that it was unclear from the strategy how JISC's direction is informed by, and itself informs, other stakeholders, e.g. the funding councils. They also suggested that the language in some parts of the strategy is at odds

with other national bodies where the move from 'e-learning' to 'enhancing learning through the use of technology' is now well embedded and recognised.

- 1.14. The economic case for some of the areas suggested needs to be more clearly stated, e.g. for shared services, and it should be acknowledged that issues around the exchange of data between e-learning systems are a barrier to the kinds of developments which might be needed in the coming years.
 - 1.15. Finally, a number of respondents wanted to see continued and sustained investment in the provision of Janet and JISC's content services. Many saw Janet as one of their most important priorities.
- 2. What do you think are the most significant a) immediate and b) longer-term challenges facing UK universities and colleges in the following areas:**

ICT to support *learning and teaching*?

Immediate challenges

Funding

- 2.1. Both HE and FE respondents felt that a lack of current and potential funding is a key immediate challenge in this area, with a need for reducing the costs of delivery without undermining student satisfaction. One example cited was that the annual licence cost for a virtual learning environment (VLE) is regarded as a serious problem by institutional management, and yet it can influence most staff in their teaching and most students in their learning in the life of the institution. The ongoing demand for expansion is also considered to be a funding issue, as is limited library budgets, and the need for developing cost effective shared national services and associated information management systems. Specialist subject disciplines also have particular needs which need to be sustained to ensure that UK HE remains world-leading.
- 2.2. One FE respondent commented that their key overall challenge in this area was to be able to commit adequate investment to the infrastructure and staff (teaching and technical) training, as well as to research and innovation, in order to realise the benefits of ICT and returns on investment, as well as meeting the expectations of learners and staff for both here and now and the future. Another FE respondent cited accessibility of hardware for all learners as a key issue.
- 2.3. A number of respondents felt that JISC should continue to support collaborative purchasing models, and promote the potential of central negotiation of licensing activities and collaborative procurement activities, to maximise value for money within the community.

Staff and students

- 2.4. Improving information literacy, and digital literacy as a whole in institutions, is seen as a key issue concerning staff, students and senior management. Getting academic staff to develop and use VLE content is seen as an immediate challenge by a number of FE respondents, and more widely, creating time for teachers to learn and use technology for teaching and learning is an issue. This is coupled with the need to universally raise standards in using technology for teaching through provision of support and training, whilst allowing for standardisation of 'back-end' processes. Achieving consistency for students and balancing the management of the learning experience with pedagogic effort

are also seen as important.

- 2.5. It is recognised that there will be an inevitable increase in Student to Staff Ratios (SSRs) due to reduced funding per student for teaching. Consideration therefore needs to be given to how ICT can be used to counter this, i.e. simply doing more with less when the natural instinct is to be safe and shun change. This runs in parallel with the concern of many respondents in meeting students expectations of ICT on entering university or college, particularly with regard to use of social networking. This is discussed in more detail in paragraph 2.15 below.
- 2.6. Engaging and retaining academic staff (particularly experienced and knowledgeable specialist staff in Information Learning Technologies), and funding staff development and support are seen as key issues. Inter-institutional systems integration coupled with the consequent impacts on student and staff experiences is also perceived to be a challenge. There is a need for robust delivery of e-learning, including intuitive interfaces, and there are issues around how this can be continually developed to enhance the learning experience, and contribute to innovative teaching practices, especially in supporting research-led teaching..
- 2.7. A number of respondents highlighted personalised learning, and technologies and systems to support knowledge transfer initiatives (e.g. remote access services for off-campus learners including work-based learning) and the delivery of diplomas, as key immediate challenges. Additional investment in tools to support social networking was also felt to be needed, although one FE respondent remarked that their college was finding it difficult to monitor and evaluate the impact of blended learning at an institutional level because of the dichotomy of learning technologies being used, e.g. use of VLEs versus social networking. Similarly, one HE respondent observed that there was competition for VLEs and internal learning and teaching systems from social networking technologies, raising issues such as accuracy, cyber-bullying, and plagiarism.

Institutional issues

- 2.8. One HE respondent remarked that there is still a culture of conservatism in universities, e.g. fear of Web 2.0 applications as having content that can't be 'controlled', and e-learning not being as good as face-to-face. Technology maintenance (including sufficient bandwidth) is seen as another challenge, as is the continuing need to operate within older buildings that need to be "redesigned" on an annual basis to respond to a changing curriculum (i.e. achieving flexibility). Several respondents remarked on the need for advice on the large number of commercial products available with perceived limited interoperability, and the challenge of supporting open source alternatives.

Access to resources

- 2.9. One respondent commented on difficulties in finding good quality educational resources, and all available digital resources, e.g. library catalogues, repositories, corporate data etc, whilst another highlighted restrictions between organisations due to varying interoperability standards, e.g. e-portfolios, students record systems, VLEs. It was felt that promoting coherent resource discovery through federated search mechanisms, and promoting good metadata to improve search capabilities were key issues, as was copyright of resources which is a potential barrier to open educational resources. One FE respondent felt that JISC should explore multi-institutional collective licences to enable access to specialist journals and learning resources in collaborating

institutions.

2.10. A number of respondents recognised issues around support for open educational resources, and embedding online learning as an integral part of learning provision.

2.11. Other immediate challenges include:

- Increasing the speed of technology adoption in HE to keep up with users expectations, and focussing research and guidance on 'mass adoption' as opposed to 'early adopters' – in the short and long term;
- Development and implementation of VLEs;
- Technology innovation, e.g. more fully exploiting sector-wide Web 2.0, but avoiding the lure of the 'latest trend' to ensure stability;
- Using best practice, e.g. using the right VLE, the right portal technology, the right library technology platform, using wireless networks well;
- Compromised capacity to invest in greener technologies;
- e-Safety/safeguarding in a context of Web 2.0 opportunities and fashions;
- Embedding technology enhanced learning and teaching, and development of interactive content, across the curriculum (e.g. ICT-enabled course design);
- Developing effective 'blended' approaches to delivery;
- Need for common terminology across the sectors;
- IPR issues, especially those associated with the open agenda, e.g. IPR of teaching materials, licensing specific applications software for student-owned laptops, etc;
- Internationalisation;
- Demand driven, rather than strategically focussed and funded, digitisation;
- Libraries as an important part of experimentation and transmission;
- Creation, management and delivery of rich media files including video;
- Plagiarism.

Longer-term challenges

Strategic direction for ICT

2.12. One of the key longer term challenges, particularly for FE, is to keep up with the pace of technological change, and to establish some long term strategic direction for institutional ICT provision, e.g. use of Web 2.0 and mobile technologies, Web 3.0, future generation VLEs, balance and integration with other forms of learning, achieving penetration of learning and teaching technologies across the institution, addressing sector-wide agendas, use of alternative mainstream software products. More widely is the need to work strategically with senior managers in institutions to embed the implications of blended learning in all aspects of institutional management.

Costs and benefits

2.13. Another longer term challenge of concern, particularly for FE, is developing ICT systems and working practices that are financially sustainable, and balancing the cost of ICT investment against other institutional priorities, e.g. moving from expensive proprietary software to inexpensive dynamic software (in the cloud). Achieving maximum return on investment in learning technologies is also important, in terms of quality as well as financial returns. Across the sectors, future benefits from any large-scale investment in ICT for learning and teaching will need to be supported in the longer term by a credible system-wide case rather than by examples put forward at the micro level.

2.14. One result of a lack of funding in institutions is the potential restructuring, reduction or removal of institutional support services. In the medium to long term this will have an impact on the quality of support for staff and learners in institutions, the adoption, development and implementation of new technologies at institutional level, and the capacity in institutions to undertake research and evaluation activities.

Meeting students' expectations

- 2.15. Many respondents appear to feel the pressure to meet students' (including postgraduates) expectations of technology provision on arrival at university or college, including how they will help students to develop the skills needed to become effective workers and citizens in an information society. It is perceived that there is demand for very rich, accessible (24/7) virtual environments from students, where they can integrate use of their own devices into their learning experience, and all students have access to some kind of computing device, with which they can collaborate with each other. This issue also includes the need for delivery of teaching and effective scalable support for overseas and distance learners, using technology. One Scottish respondent remarked that a reduction in funding levels has left Scottish universities struggling to keep up with English HEIs.
- 2.16. In parallel with this is the challenge of developing information literacy skills within the student population in an environment where information is immediate, and in developing media literacy skills for staff involved in delivering teaching, learning and assessment. Advice on what technologies will be available in the future and what behaviours are likely to result from them would be useful. One FE respondent suggested that a 'UK Education Environment' was needed, where once a learner was authenticated to the network they could access services from wide-ranging sources across the education domain. Aligned with this is the challenge of providing students with an employer-like setting before they graduate, so that employer expectations are also met.
- 2.17. There is a need for established and implemented common standards in e-learning provision and general interoperability of systems, e.g. for VLEs, e-portfolios, content creation and delivery, etc, so that information can move with a student between institutions. The provision of reliable content through sustainable shared online content services, with persistent referable provenance, also needs to be maintained.
- 2.18. Other longer term challenges include:
- Embedding use of technology in delivery of teaching and learning at curriculum level, but seeing technology as an enabler rather than a cure-all;
 - Maintaining technology infrastructure and ensuring network capacity;
 - Provision of storage space for learner data in institutions given Web 3.0 developments, and managing higher volumes of data generally;
 - Managing the large scale transition to e-books and possibly print on demand;
 - Managing a rapid increase in the use of non-text learning materials;
 - Implications of cloud computing;
 - Competition via e-learning, i.e. loss of geographical barriers to entry;
 - A refresh of current systems;
 - Cultural change to encourage use and sharing of reusable learning objects;
 - Design and management of teaching/learning spaces;
 - Avoiding content traps;

- Promotion of open access and re-use;
- Content licensing/copyright for digitisation and digital access, particularly via more fluid media;
- Security;
- Sustainability – ‘green computing’;
- Evaluation of effectiveness of e-delivery.

ICT to support research?

Immediate challenges

Funding

- 2.19. A key immediate challenge for FE is that there are almost no funding opportunities for the FE sector in research and their involvement in this area needs to be ensured. The dissemination, access to, and active use of research findings in e-learning from the HE sector into the FE sector (real life, viable working practices) would help with this. However, a number of FE respondents were of the view that research was not relevant for their sector.
- 2.20. Some HE respondents also cited funding issues as a challenge in this area, such as reductions in library subscriptions to serials due to budget pressures, continued rising costs of e-journals, and decreasing income streams. It is perceived that there is currently an uneven playing field across subject disciplines in terms of a critical mass of authoritative research outputs. Any loss in momentum due to funding reductions serves to delay valuable interdisciplinary work.
- 2.21. The British Library commented that sharing the costs of digitisation is important, particularly for content-rich institutions, as digitisation of legacy content is critical to research excellence.

Institutional issues

- 2.22. More widely, it is felt to be important for institutions to have a range of integrated technologies for research activity, not only to carry out and manage research but also to capture the outputs and impact of research, e.g. developing and managing repositories, and integrating them with research management information systems, particularly in the context of the REF, a ‘national information resource framework’, a more effective and efficient GRIDs environment. There are challenges around live systems which also need to be addressed, and there needs to be greater support for e-infrastructure related developments.
- 2.23. Staff development, whilst noting the differences between senior and junior researchers, is an immediate challenge (including digital literacy), as is correcting the perceived slant towards the support of research in HE as compared to the support of teaching in both sectors. Further work on institutional processes to support repositories would be helpful as it is perceived JISC’s current work on this only has localised impact. It is also perceived to be a challenge to address the expectations for research from those studying HE in FE.
- 2.24. One HE respondent felt that advice would be helpful on intellectual property issues in relation to some HEIs requirement that all research output be placed in the institution’s digital repository. Open and transparent research data management (including datasets), and the development of systems to support

it, were also felt to be significantly important by a number of respondents, e.g. security, preservation, sharing, mining, analysis, skills base, etc, as was embedding VRE approaches within business systems. More comprehensive computing support for researchers from central IT services is also needed.

Inclusive research debate

2.25. Another immediate challenge to address is that the debate on ICT for research does not focus solely on the needs or desires of the top 20 or 40 research universities but also recognises the need to enable smaller (in current research output terms) institutions to compete and collaborate. These 'smaller' institutions need to be provided with greater access to the tools, data and collaborations which will help them produce high quality research.

Access to research resources

2.26. A number of respondents commented on the immediate challenge of access to research resources, including identity management issues, and managing expectations of what will be available for free and what users will be asked to pay for. As part of this, one national library suggested that JISC should develop a broader relationship with the research sector outside the HE community to make valuable content held outside the sector more accessible, e.g. regional and local archives, libraries, museums and galleries. Resources held within the HE sector should also be made more accessible to research communities outside HE, including the general public. Providing open access to peer reviewed publications was seen as important, as was improving search engines for web-accessible research publications and sector-wide access to citation data. Legal issues, such as IPR of third party research materials, are also felt to be important.

Collaboration

2.27. A number of respondents felt that collaboration between researchers across disciplines and institutional boundaries was a real issue and needs to be better supported, e.g. support for mobile working, and operating in 'virtual' teams both within institutions and beyond. One respondent, however, remarked that, although collaborative systems are important, they should not adversely affect the independent nature of academic research.

2.28. Other challenges pertinent to HE include:

- Preparation for the Research Excellence Framework (REF) (notably, use of citations and bibliometric indicators);
- The need to achieve consistency in data exchange across a range of stakeholders (RCUK, HESA, HEFCE) and within institutions (includes policy and regulatory issues);
- Need for more evidence of the effectiveness and impact into the real and potential benefits of ICT to support research;
- Addressing the increasing cost of research computing;
- Supporting a wide variety of software.

Longer-term challenges

2.29. Generally, respondents felt that the longer term challenges in the area of research were the same as the immediate challenges, such as a lack of funding opportunities and the need to reduce research costs across the sectors, more integrated and intelligent research technologies (development of repositories), the need to ensure a broad research debate, access to research resources, and research data management. Linked to the lack of funding in FE is the

concern that FE doesn't drop too far behind HE in all aspects of research. Russell Group universities felt that JISC could provide further clarification on its plans for supporting technological developments in research over the longer term.

2.30. It was felt by a number of respondents that funding models for the support of supercomputing and increased national facilities for high-performance computing (including guidance) were needed, as well as greater general leadership in this area. Alongside this is the need for more sophisticated search tools, and maintaining long-term support for research in a cloud computing environment. However, basic communications and data centre infrastructure issues need to be resolved in institutions first. Enabling mobile devices in the research context is seen as important, as is resolving authentication issues to ensure maximum uptake of resources.

2.31. One HE respondent felt that JISC should play a part in ensuring enhancement of the ICT skills base of those engaged in research. There is also a need to integrate the systems which support research (administrative and publishing) and to support collaborative research activities across multiple institutions, via shared services etc. The changing landscape or currency of research is also felt to be an issue.

Open access

2.32. It was felt that advice is needed on how/if to move to open access, and open access issues for research publications at the policy, legal (IPR) & technical level. There is also a need to join together new 'open' practices in research and education working with other like-minded organisations, e.g. Enabling Open Scholarship (EOS). Above all, there is a need to ensure the quality of research outputs in an open access world.

Standards

2.33. The development of agreed technical standards, as well as standards to support sharing of research data, were generally felt to be important. The adoption of standard data formats for research-related data is also an issue.

2.34. Other longer term challenges include:

- Preservation, curation and associated cultural change;
- Providing access to both research and the underlying data in a robust infrastructure;
- Digitisation of special collections and archives (which, when, how, cost?);
- Establishment of repositories for smaller/less research-intensive institutions;
- Drivers that influence ICT, e.g. desire to standardise v academic research;
- Advice on emerging virtual research environment tools;
- Use and interoperability of CRIS (current research information system);
- Regional shared data centres for HE;
- Understanding the needs of researchers and helping to shape future provision, e.g. high-quality summarisation of research findings;
- Ensuring high bandwidth access for researchers working on and off campus with collaborative partners;
- Automating experimental processes/laboratory management tools;
- Doing more to enable connectivity between digitised collections;
- Managing the ethical assurance of data use.

ICT to support *management/corporate information systems?*

Immediate challenges

Costs and benefits

- 2.35. One of the main immediate challenges in this area for FE, as well as small HEIs, is funding and the cost of investment to achieve operational flexibility, efficiency and quality of information. More widely there is a requirement for better quality management information (via effective business intelligence tools) and clear cost benefit analyses for management decision making in individual institutions, e.g. for advice on outsourcing and shared services. With this there should be recognition that institutional-level factors (e.g. cost pressures) may outweigh system-wide factors in determining the balance of choice at the institution level.
- 2.36. Russell Group universities have mixed views on management information with some seeing it as an immediate challenge. Others have urged caution about developments in this area, and this is perceived to be because some see many of the issues relating to management information systems and business processes depending critically on the ability of institutions to re-engineer their business processes, and not necessarily on the underlying management information systems themselves.
- 2.37. Moving from legacy systems to different solutions can incur large costs and is felt to be a key issue. One respondent highlighted the challenge of how institutions could influence software/systems markets to achieve change. Another respondent recognised a perception in institutions of the notion of shared services conflicting with institutional autonomy.

Collaboration

- 2.38. Agencies such as UCAS⁴, QAA⁵, HEFCE⁶, HESA⁷, UK Border Agency⁸ etc, impose significant requirements on institutional ICT systems in all UK HEIs. Investment in collaborations which reduce the burden of reporting and shared data requirement in these areas should therefore be considered.

Use and integration of systems

- 2.39. Another immediate challenge in HE and FE is the use and integration of systems, e.g. integrating administrative and library processes with learning and teaching processes, effective student management systems, supporting distance learning, identity and access management systems and processes, etc. Included in this is the shift from system-focused to user-focused delivery, and the need for change management in institutions to be addressed (i.e. cultural change in the delivery of institutional efficiency through technology).
- 2.40. One HE respondent felt that standard processes should be defined for all the main administrative functions in an institution, which could then be implemented across the sector. These functions should be flexible and foster and support innovation in both teaching and research, whilst ensuring rigour and accountability. The need for up-to-date customer relationship management systems across an institution was also highlighted, to support students once they have joined the university. There is also a need to be able to transfer

⁴ <http://www.ucas.ac.uk/>

⁵ <http://www.qaa.ac.uk/> (Quality Assurance Agency)

⁶ <http://www.hefce.ac.uk/>

⁷ <http://www.hesa.ac.uk/> (Higher Education Statistics Agency)

⁸ <http://www.bia.homeoffice.gov.uk/>

information beyond the institution, e.g. award verification requests from prospective employers.

- 2.41. Generally, there is real work to be done in identifying the drivers of complexity and inefficiency in this area, and it is felt that the strategy should outline more concrete actions. The implementation and use of current systems needs to be improved and data should be more interoperable and searchable, but also standardised across universities and colleges for work with funding councils and regulatory bodies. Several respondents commented on how commercial software tends to 'lock in' operational and administrative processes, raising the need for collective bargaining and development of systems.
- 2.42. It was highlighted that systems (software and platforms) need to be integrated for institutions' key business activities, and effective IT governance mechanisms need to be established. There is also a requirement to integrate with new partners. There are further challenges around maintaining the ICT skills base of staff using corporate information systems, and providing information via a single user interface and single sign-on. Some form of knowledge sharing on best practice for use of enterprise architectures and SOA would also be welcome.
- 2.43. For FE, consideration needs to be given to the flow of appropriate data between organisations and learning providers for students studying new Diplomas, e.g. attendance, achievement, learning styles, etc. Finally, one respondent raised the issue of dealing with the digital capture, manipulation and management of non-digital institutional records and data.
- 2.44. Other short-term challenges in this area include:
- Introduction of "green" initiatives, e.g. document management systems;
 - Implications of REF on investment, systems and processes;
 - Performance monitoring through Key Performance Indicators (KPIs);
 - Methodologies for managing development priorities and resource allocation in the context of multiple demands and finite resources;
 - Demonstrating value of ICT to the organisation.

Longer-term challenges

Achieving and maintaining efficiency

- 2.45. One of the longer term challenges in this area is to achieve genuine efficiencies through the development of flexible, integrated, secure and sustainable systems across the sector in a strategic way, and to meet the expectations of learners in terms of service provision, e.g. through use of web services, shared services, improved workflows, personalised reporting, compliance with emerging standards (especially for horizon watching), cloud computing, federated searching of all digital information, efficient infrastructure and network performance. Digital preservation is also a challenge in this area including the link between information management and preservation capabilities, and the long-term sustainability of information to support research and policy.
- 2.46. Management systems need to be seen as assisting and enabling change through being responsive and agile (modelling and business development), rather than their traditional monitoring and controlling function. It is perceived in FE that there is much that colleges duplicate locally which could be done centrally in terms of key business processes. It was felt that any model adopted would need to meet other requirements such as institutional-specific

information, Welsh language requirements, MIAP⁹ etc.

- 2.47. One respondent felt that there was a challenge in taking a more strategic view in the face of differing user requirements and priorities, while a number of respondents cited 'green ICT' as a significant issue.

Institutional culture

2.48. An ongoing challenge, particularly for FE, is seen to be embedding information learning technologies (ILT) into the culture and skill set of lecturers, and, indeed, the daily practice of colleges, e.g. college responses to the new pay and funding system. This embedding has taken longer than expected for some colleges and existing work is under threat. ILT specialists therefore need to be supported in continuing to develop and embed ILT. More widely, business skills need to be developed in institutions to complement the technical expertise that now exists.

- 2.49. One HE respondent questioned how JISC would encourage institutions to share services when many have been unable to agree standard processes and systems within themselves.

Process lag

2.50. It is perceived that administrative and other processes which should support new technological developments and models for learning, teaching and research, in reality lag behind and may hinder them, and this needs to be addressed. However, it was felt to be important to maintain the best of these systems coming out of the recession rather than move to technology-driven, less useful systems. Releasing proven best practice exemplars in this area would be helpful.

- 2.51. Finally, UCAS remarked that the scope for interoperability could be widened to be Europe-wide.

3. What do you think are the biggest challenges in delivering the business and community engagement agenda where ICT could help?

Accessible provision

- 3.1. One of the key challenges in this area is felt to be the funding and provision of technology which allows greater access (including authentication) to the activities of institutions for businesses and the community. For example, integrated, flexible, stable and pervasive ICT systems in an institution would enable business customers to investigate, enrol and study online, thereby encouraging business markets. This could be through Web 2.0 tools, opening up educational resources and VLEs, facilitating virtual classrooms, customised delivery to handheld devices, accessible archived data, etc. It is perceived, however, that improvements will be needed in the links between business drivers and technological capability in order to achieve this, as well as the development of institutional BCE strategies and common standards. Ensuring staff time for contact with businesses and the community is also essential.
- 3.2. It is important in terms of community engagement to be able to offer and market stable learning environments for many different types of learners, including non-traditional learners. Guidance on the use of customer relationship management systems in this area will therefore be key. Guidance on remaining compliant

⁹ <http://www.miap.gov.uk/> (Managing Information Across Partners)

with licence agreements would also be welcome in terms of institutions making content available – this could be assisted by the development of agreements which assist business while strengthening learning and research. Advice is also needed on ways of capturing and recording community engagement.

- 3.3. More widely, there appears to be a need to address the different levels of IT skills and engagement in ICT in businesses and the community, which will, in part, increase confidence in the use of ICT for this type of engagement. One respondent suggested joint CPD (Continuing Professional Development) opportunities for staff working in colleges and local businesses. It was recognised by one HE respondent that some institutions struggled with achieving meaningful returns on community engagement and so support on quantifying those returns in terms of corporate social responsibility would be helpful.
- 3.4. It is recognised by a number of respondents that institutions could also learn much from businesses, where advances in ICT tend to be adopted more quickly because of their different management ethic, e.g. training, use of ICT infrastructure, knowledge management and customer relationship management. This would, in turn, enable institutions to become more competitive. Mechanisms to support joint development between education, business and commercial software/hardware developers could underpin much of the business engagement activity of many institutions.
- 3.5. Alongside these issues, capacity is needed to invest in overcoming the digital divide, including rural barriers/inequalities of access, e.g. through cross-sector strategies, more flexible ICT policies and procedures, developing 'blended' approaches to course delivery, and developing staff skills in distance learning. As part of this there is a need to use technology to motivate isolated students who are at a distance from their tutors and peers. This is a particular problem in North Wales where mobile internet connectivity is poor in many locations, and there is a high proportion (93%) of SMEs and micro-SMEs making up the business sector.
- 3.6. There was some concern that employers overseeing the work of educational institutions may harbour a fear of 'blame' and 'reprisals' for lack of effective success and this was a challenge to overcome. There was an indication that institutions also tended to worry about whether audit and awarding body requirements would get in the way of displaying openness to employers. It was felt that electronic records of lifelong learning under HE learner control could encourage engagement by business and community employers.
- 3.7. To support both businesses and the community, many HEIs provide valuable archival services to researchers in their local communities and beyond. It was felt that ICT has an important role to play in bringing these facilities up-to-date and meeting modern day user expectations. JISC could usefully engage with The National Archives¹⁰ strategy "Archives for the 21st Century" to maximise impact in this area.
- 3.8. One respondent recognised that research outputs from institutions could be more effectively used by industry and commerce if the research activity within institutions was more effectively managed and made more accessible. This issue was, in part, attributed to the lack of training for researchers in effective

¹⁰ <http://www.nationalarchives.gov.uk/>

tagging of their data and few incentives for them to make their data available. A cultural rather than technical change is therefore needed in this area.

- 3.9. A number of respondents highlighted that Janet needed to be flexible enough to exploit emerging collaboration and commercial opportunities, i.e. multi-agency delivery. A review of current licensing rules may therefore be needed.
- 3.10. Another respondent felt that the Digital Engagement manifesto¹¹ may provide a helpful focus for digital engagement activities in this area.

Sharing information

- 3.11. Sharing information with and between institutions is seen as another challenge that needs to be addressed, e.g. through the development of shared services for applications and feedback, that have been adapted for business use. Building open architectures which not only serve the education sector but which also promote collaboration beyond it would help to address this. All exam boards recognising online assessment, submission, portfolios, verification etc in appropriate qualifications is also seen as important.
- 3.12. These steps can only be taken once there is a thorough understanding of the agenda, stakeholders, drivers (including competition) and returns behind business and community engagement.

4. Are there any additional areas of advice you would like to see JISC fund at a national and/or regional level which would support the sector in the light of the changing environment?

Funding opportunities

- 4.1. A particular area of interest to FE is that of better funding opportunities for the FE sector, where there is an apparent perception that only grade 1 or 2 colleges receive funding. However, FE respondents generally felt that the JISC Regional Support Centres¹² (RSCs) provided an excellent service and should continue to be supported. One HE respondent felt that the remit of the RSCs should be extended to enable them to directly support universities (e.g. to facilitate sharing and dissemination of good practice). This was echoed by a number of respondents.

Advice on ICT options

- 4.2. It is felt that advice on ways of evaluating the ever increasing number of alternative ICT options (including horizon scanning), plus supporting information and data to aid decision-making, would be helpful, e.g. cloud computing and other ways to 'out source' storage and management of systems, interoperable and sustainable systems for recording achievement, using advanced ICT to manage research and learning, developing an overall business model, etc. This should take into account financial evaluations but also risk profiles, development paths, upgrade costs, staff training requirements, user training implications, integration issues, business continuity/disaster recovery etc. Aligned with this is the need for help in accommodating the needs of the diverse range of students that institutions now attract.
- 4.3. One FE respondent remarked that JISC Infokits are useful resources, but a second tier of mentor-like support for institutions would be helpful to enable

¹¹ <http://digitalengagement.org/manifesto-2/>

¹² <http://www.jisc.ac.uk/rsc/#>

more detailed work on thematic topics. Another respondent felt that sector-wide access to IT industry analysts would benefit the sector by increasing and improving knowledge of IT.

- 4.4. An HE respondent felt that obtaining systems advice and consulting through a pool of HE professionals from the sector may prove more cost effective and sustainable than outsourcing to independent consultants and advisors.
- 4.5. A number of respondents called for more coordinated support for open source products, such as platforms for VLEs, e-portfolios, social networking and other tools. However, it was felt by another respondent that the remit of JISC should expand to include all aspects of ICT, with a particular focus on unification of technologies rather than open source components.

Services

- 4.6. One HE respondent felt that fewer rather than additional services are needed so that sometimes scarce resources could be concentrated on the ones that made real differences to institutions, such as JANET¹³, the RSCs, JISC Collections¹⁴, and associated authentication/authorisation services. Additionally, they felt that there is a danger that the management of services by companies not rooted in the community would reduce the community's voice and possibly impinge on the fitness for purpose of the services provided. Another respondent wanted to see Software as a Service (SaaS) provided centrally, e.g. mail/web filtering, whilst an FE respondent wanted greater support for colleges to access relevant learning and teaching resources through agreements such as JISC Collections.
- 4.7. It was felt there should be a clear focus in the strategy on initiating shared services via established regional groupings, such as the Janet regional network operators, where empathy and trust already exist between group members. A number of FE respondents called for greater support for inter-institutional knowledge transfer. One HE respondent felt that more consideration needed to be given to shared data centres and shared systems administration.

Global competitiveness

- 4.8. A number of HE respondents remarked that it would be useful to have advice on how the sector can exploit the use of ICT to work within a globally competitive HE marketplace, i.e. a view of how the sum of UK HE's offering could be bigger than its individual parts. A review of the effectiveness of virtual learning environments in this context would also be helpful. On a more national level, improved holistic benchmarking information for institutions may also encourage competitiveness.

Information management

- 4.9. Given the information landscape is changing rapidly in response to developing technology, it is important for everyone from government departments to education institutions to keep the right information to manage their business, maintain accountability, support evidence based policy making, and to comply with access legislation. There is also an economic benefit in implementing effective information management practices. Senior support and engagement is needed from the leaders of departments and agencies to take this work forward. Any JISC activity that continues to fund or promote these objectives

¹³ <http://www.ja.net/>

¹⁴ <http://www.jisc-collections.ac.uk/>

would therefore be welcome, e.g. defining best practice.

Standards

4.10. One respondent remarked that both Athens and Shibboleth continue to develop their products but there is no understanding in the sector of the particular value of each, and so advice in this area would be helpful. It would also be useful to have access to case studies of both which included the costs of implementation and ongoing maintenance to enable institutions to make a balanced judgement about which service to adopt.

Support

- 4.11. It is perceived that there is a need for JISC to provide further support for institutions, including for the full ICT function within institutions, e.g. desktop user support, multimedia and audio visual support. To make use of existent and often good informal connections between institutions, it is felt it might be beneficial to establish user groups or networks who share common resources to develop services and software platforms. It is perceived that this would enable HE to emphasise the importance of certain factors to software providers as a collective.
- 4.12. Other areas of interest were increasing the impact of research (possibly with RIN) through publication and access, as well as more support for research data management and sharing, and managing the REF. The provision of guidelines, developed with content partners, on how to explore the impact and outcomes of digitised resources in the research community would be helpful. Advice on the provision of user e-safety advice to respond to current trends and problems was of interest, as was the brokering and support of high quality niche staff development in non-city-based institutions.
- 4.13. Other areas suggested for guidance and training were procurement training for non-financial managers, guidance on creating effective partnerships (i.e. how to deal with different priorities and cultures so that organisations with common interests can work together), change management, and best practice for compilation of online materials with a framework for launching online material to the learner.
- 4.14. The British Library felt that JISC could give advice on provision of services that enable discovery, reuse, and adaptation of data and content through JISC and other systems. They felt that there is also a pressing need to adapt copyright law to ensure that material available to researchers in analogue formats remains available in digital for learning, teaching and research purposes. JISC and the British Library are in a strong position to provide leadership on this issue.
- 4.15. Finally, an FE respondent suggested that JISC could engage FE and HE institutions in discussions over their willingness to allow access to digital content on their VLEs, at course folder level, given the vast repositories of course specific materials that have now been produced.

5. What, if anything, would you like to see JISC do to help address ICT and information management institutional skills (and structures) in universities and colleges?

Effective communication and training

- 5.1. It was felt that JISC could help to improve the communication of what is available in terms of addressing these skills, but also help to more clearly define relevant institutional roles, e.g. business analyst, project manager, change manager, Programme Management, Information Officer, etc. Alongside this is the need for ICT initiatives and training at all staff levels for long-term generational change and greater professionalism of the HE and FE ICT community, from senior managers to technology staff. Relevant surveys and investigations would enable JISC to make recommendations in this area, whilst common standards for training and common qualifications could be established, with JISC working in consultation with awarding bodies in this area. Institutions who have best practice in this area should also be identified and case studies provided.
- 5.2. One respondent felt that it would be useful for the RSCs to provide centralised training, support and procurement of training to the sector, with several others stating that the support provided by their RSC had been of great assistance and should be maintained. JISC could also provide a central online training environment for all staff and students across the UK, e.g. particularly for staff in areas such as project management, business analysis, systems implementation skills, data analysis to support research strategy etc. More specifically, some FE respondents remarked that more operational support and specialised training for FE would be welcome, with a Level 2-4 organisational focus and no research commitment.
- 5.3. The HE sector is very diverse but this creates difficulties for institutions attempting to establish a clear evidence base for particular strategic approaches. It would therefore be helpful if JISC could provide a clearer understanding of the 'landscape of e-learning' within the HE sector. One HE respondent felt that JISC should focus more on the benefits of well-implemented ICT, and guidance to help promote that, rather than 'academic style' research. Another felt that there needs to be a focus on promoting ICT as something embedded rather than something 'different'.
- 5.4. Russell Group universities felt that care needed to be taken over priorities in this area, and that developmental functions should be targeted at areas within HEIs where value can be demonstrated, e.g. delivery of benefits from projects, long-term data accessibility, and technology-enabling engagement activities.

Communities of practice

- 5.5. JISC could help to establish communities of practice in this area (where there are no distinct competitive advantages) to explore the issues and problems, in collaboration with the Leadership Foundation¹⁵ and possibly UCISA¹⁶. It was highlighted that there are already well-developed communities of practice for MIS and IT within the Scottish sector and so there may a role for the RSCs to link into these communities in areas such as training.
- 5.6. The publication of examples of best practice, case studies, templates and toolkits would be helpful, as would training and advice in the benefits of cloud computing, Software as a Service (SaaS), outsourcing and shared services, information management, using ICT to improve communication, and how to make genuine and significant efficiency gains from the use of ICT.

¹⁵ <http://www.lfhe.ac.uk/>

¹⁶ <http://www.ucisa.ac.uk/>

- 5.7. One respondent felt that JISC should set up a framework and provide starter funding for institutions to audit their own skills and structures to identify:
- The location and nature of skills gaps;
 - The extent to which these can be filled by internal training;
 - The extent and nature of the need for external training.
- 5.8. In addition, one respondent felt that JISC should take the lead on library management systems development, in partnership with other stakeholders. Guidance on the Qualifications and Credit Framework/unitised curriculum implications would be helpful, as would better and more agile methodology than PRINCE2 for software management. Governance and decision making processes are also perceived to be an issue that needs addressing. One HE respondent felt that JISC should simply do more of what it was already doing, highlighting that the toolkit approach is particularly helpful.
- 5.9. A small number of respondents felt unclear that JISC was in a position to support institutions in this way at all.

6. Is there anything you feel JISC could do to improve the embedding and take-up of the outputs of its projects?

Effective communication

- 6.1. It was felt that there should be a stronger focus on effective communication and dissemination around tangible project outputs, particularly their value, impact and relevance across the community, e.g. through well targeted, timely seminars (in person and online), roadshows, existing networking meetings (mission groups, professional bodies etc), training, communicating value for money, a dedicated Institutional Liaison member of staff at PVC level, benchmarking opportunities, ‘town meetings’ in each RSC. Working with partners, where appropriate will be key to this activity (e.g. UCISA, RUGIT¹⁷, SCONUL¹⁸, RLUK¹⁹, SLIC²⁰), as will receiving support from senior management in institutions. A number of smaller colleges and HEIs that responded commented that visits from JISC staff would be helpful.
- 6.2. This includes doing much more to market project outcomes in a variety of ways that will reach different staff groups on institutional campuses (e.g. through ‘lead practitioners’, more direct links between project outputs and staff development support), as well as reaching over to non-traditional JISC communities, such as learning space activities for the Estates community. Another example is creating a thematic approach to dissemination which would help FE institutions particularly decipher the outputs of most use to them. Similarly, some kind of ‘FE Academy’ would help to raise awareness of JISC and its activities amongst FE teaching staff as this is currently low.
- 6.3. More widely, it was felt that some kind of reference implementation (e.g. a ‘virtual university’) for project outputs should be produced and maintained by JISC, against which products from JISC innovations and projects can be implemented and tested. This would help to establish standards and promote interoperability across the sector and could be of use to suppliers. Another respondent suggested an ongoing ‘benefits realisation programme’ open to the exploitation of any previous programme output, so that institutions can adopt

¹⁷ <http://www.rugit.ac.uk/> (Russell Universities Group IT Directors)

¹⁸ <http://www.sconul.ac.uk/> (Society of College, National and University Libraries)

¹⁹ <http://www.rluk.ac.uk/> (Research Libraries UK)

²⁰ <http://www.slainte.org.uk/slic/slicindex.htm#> (Scottish Library and Information Council)

JISC technologies in their own timeframe.

- 6.4. One HE respondent remarked that there should be a push towards more 'practitioner friendly/practitioner informed' development. This would result in more accessible use of language, less specialist knowledge needed to engage, and a greater understanding of the day to day challenges faced by practitioners. The same respondent felt that calls that are related to software development should encourage participants from at least 2 or 3 different institutions to encourage collaboration and maximise uptake of developments.
- 6.5. It was suggested that types of communication of project outputs could include more case histories including best practice, provision of template packs and worked examples, and more diagrams in publications, all accessed through a 'one stop' portal for search and deposit of all relevant material. JISC could also facilitate cultural change on proven innovative approaches in HE through a pool of resources, e.g. JISC 'consultants'. Generally, it was felt there needs to be a greater emphasis on the real learning benefits of established technologies, clearly demonstrating the link to student retention and achievement.
- 6.6. To make effective communication easier it was further suggested that related projects are consolidated into better coordinated programmes, and that greater input and drive should be solicited from the sector. Some further clarity was also needed on the distinction between R&D projects and ongoing services which would be helpful for both HEIs and potential partners.
- 6.7. Several respondents questioned how JISC learns the lessons from its projects, in terms of what worked and what didn't, as it was not particularly clear to date that such lessons had been taken into account, e.g. through evaluations. Similar questions centred around how JISC measures the impact of its outputs to assess its own success, and how JISC ensures that lessons from short-term, small scale projects support institutions and the sector, rather than individual staff or small project teams. This indicates that there needs to be a more explicit link in JISC's ongoing activities/programmes of work, and a greater drive for dissemination and adoption of project outputs.

Preservation

- 6.8. JISC should invest more effort in the preservation of project outcomes at a visible level for all institutions, as this is currently felt to be very inconsistent. This could be achieved through a dissemination and sustainability component being included in all project funding which should be policed. Following on from this, JISC could usefully make project themes and outputs more searchable as this is currently felt to be very time consuming, e.g. summary abstracts and full text searchable resources available online with peer ratings of quality.
- 6.9. One respondent felt, in the paragraph on the research investment area, that the specific issues of research should be teased out further into data management and preservation. This would provide a more convincing commitment that JISC's own funded projects in this area will be exploited more fully.
- 6.10. One respondent commented that further attention is needed on the presentation of JISC infoNet activities and Executive projects which support information management and curation/preservation, and how they relate. If this is not done, there is a danger that some of the 'on the horizon' work will pass many practitioners by. The same respondent highlighted that the creation and sustaining of platforms, with dedicated facilities for the continued accessibility

and preservation of research outputs and other data for reuse, generally needs greater prominence in the strategy (in investment area 4), as does the continued accessibility and preservation of learning objects. It would also be helpful if some clear digital preservation scenarios could be added to the 'beyond the horizon' column of investment area 4. As a related point, if the challenges around digital curation are going to be addressed, JISC needs to establish clear lines of responsibility for this activity within its structure.

- 6.11. It is recognised that a large corpus of knowledge has built up of JISC projects over the last 2-3 years by personnel who have worked on those projects. Project plans are not required to have an explicit path for the value-added knowledge that is derived from the project process. This knowledge base has huge potential and JISC should therefore find a way of harnessing it.
- 6.12. Finally, JISC could increase its investment in developing technologies that have survived the 'trough of disillusionment' after the initial peak in the hype cycle, in order to maximise their potential.

7. We would welcome comments on JISC's process for HE and applicable FE institutions obtaining project funding and your experience in this regard, if any.

Opportunities for FE

- 7.1. There are particular issues in this area that concern respondents from the FE sector. The FE respondents recognise that the majority of JISC funding is for HE only, and perceive that the limited funding available for FE is only awarded to grade 1 or 2 colleges. This has resulted in some FE colleges feeling excluded and 'disbarred'. They have also experienced difficulties in co-ordinating with timescales and project calls (the fit with the institution's needs), the complexity of regulations (e.g. interpretation of 400 FTE, full economic costing), and the scale of research required, which all appears to serve as a barrier to FE colleges engaging with many projects.
- 7.2. It is felt that JISC should therefore provide better funding opportunities for FE, ensuring that marking criteria are transparently applied, and that it should support more colleges to achieve successful funding bids. In order to do this, JISC could foster cross-institutional projects for those organisations who lack the capacity to be involved in full project bids. JISC could also set up the ability for smaller FE colleges to apply for realistic consortium opportunities for funding with larger institutions. More widely, one respondent felt that more collaborative projects should be encouraged so that knowledge capital can be shared and the ability to bid for future funding is spread across more institutions.
- 7.3. One FE respondent whose college had successfully bid for funds felt that it may be more beneficial for JISC to fund fewer projects but provide more support to implement pilot activity across HE/FE as appropriate.
- 7.4. Another respondent commented that the Research Councils should also be allowed to bid for project funding.

Support 'non-traditional' bidders

- 7.5. Several respondents remarked that JISC appeared to reward institutions who have specific bid-writing teams and have developed finely-honed bidding skills, and that other institutions with less resources are 'constantly left in the cold and are not able to take forward their e-learning research'. The e-Learning

'Pathfinder' model²¹ was cited as being much superior. Another HE respondent, however, remarked that JISC's processes in this area are 'fit for purpose and the current model should be retained'. In any case, there appears to be a need to fit project funding with institutional priorities and the academic lifecycle, as well as to provide greater support for 'non-traditional' bidders, such as other business units in universities, e.g. through online guidance on producing a bid.

- 7.6. It was felt that the timeframe between announcements and bid deadlines should be longer to allow for suitable recruitment or redeployment of project staff, and that there should be a greater focus on potential value to the community in funding calls. Advanced warning of future funding is essential. Another respondent observed that advice and help on service/project exit strategies would help greater uptake of useful outcomes.
- 7.7. A number of respondents remarked that there should be fewer, more focussed funding calls, with larger amounts of funding allocated to them, to achieve more overall impact. Another smaller institution felt that a more differentiated (in terms of scale) and generalised (in terms of scope) model of project funding would be more beneficial for smaller institutions. It was felt that funding call documents should be shorter and less bureaucratic, and a number of respondents, including the Russell Group universities, commented that involvement in bid marking was a valuable learning exercise. Improved feedback on failed bids would also be welcome. A number of respondents commented that relatively small grants (approx. £20k - £75k) could make a big difference in institutions and could provide outputs of value across the sector.
- 7.8. Finally, one Scottish-based respondent remarked that although it was understood why many JISC funding calls are only for HEFCE-funded institutions, it is a source of frustration. Any work that JISC could do on brokering partnerships with lead institutions for bidding purposes would therefore be welcome. Similarly, an FE respondent suggested that JISC manage expectations during the bidding process, particularly where there was only a small amount of funding available and many bids were expected, e.g. by having a 'pre-submission' phase where only the project idea and aims were considered. This would allow smaller institutions to decide whether it was worthwhile to bid at all.

8. Please provide any other comments you wish to on the draft Strategy

- 8.1. The following comments are arranged in the section order of the draft strategy.

Our World/Context

- 8.2. One individual respondent made some very positive overall remarks about the draft strategy, saying that it reads as an aspirational, positioning document – "If there wasn't a JISC, this document would persuade me that having one would "be a good idea"". They felt it is well written with accessible language, and that it is also persuasive, especially where it attempts to put ICT as a potential solution to current economic problems.
- 8.3. However, one respondent felt that this section should more explicitly acknowledge the fundamental socio-technical and political changes currently underway in society, e.g. make references to open source, IPR, impact of the

²¹ <http://www.heacademy.ac.uk/ourwork/learning/elt/pathfinder>

web on academic publishing. The same respondent also felt that this section should situate the work of JISC against that of other entities in the same space, e.g. Becta.

- 8.4. One Welsh respondent felt that the draft strategy was very England-oriented (e.g. reference to the student fees review) and needs to address the whole of the UK more explicitly.

Changes in the funding and economic environment

- 8.5. One HEFCE respondent questioned whether there was a need to include more activities than those mentioned (Government's review of HE and review of fees) that may bring about change in the funding model, to take account of other possible factors. The same respondent felt that the second paragraph used 'Labour language' and questioned whether this may look appropriate in a year's time.
- 8.6. Another respondent suggested that the fourth paragraph describing the supplier model relating to administrative systems could be balanced by also mentioning the open source model. This may be just as economically viable and potentially create even more cost savings in a sector wide shared services agenda. In the following paragraph, it could also be highlighted that large central server farms are just the beginning and require a shared model.
- 8.7. In the final paragraph of this section, a respondent suggested that 'ICT is part of, and a big part of, the *solution*' rather than the 'answer'.

Changes in the education, skills and research environments

- 8.8. One HEFCE respondent questioned whether it was appropriate for JISC to seemingly endorse the perception that 'students also increasingly see themselves as customers'. Another respondent encouraged the view of students as partners rather than customers, i.e. they get out what they put in. It was also suggested that demand for HE places will continue to exceed supply for the foreseeable future, given the lack of expansion in the system, and so the statement that this may change might need to be revised.
- 8.9. Alongside the notion of online learning to support non-traditional students, a HEFCE respondent felt that accelerated, intensive and extended study should also be referenced, and that online learning may help with those. Additionally, it could be mentioned that this area was best done in the context of blended learning, given the higher levels of support that non-traditional students might require. 'Non-traditional' should also be defined as it may differ to HEFCE and others' definition.
- 8.10. One respondent felt that paragraph four on demand for content was somewhat self-defeating and could serve to engender an attitude of JISC's work not being worthwhile. Another respondent also expressed frustration that as a non-HEI they could not currently bid for funding in the content area, highlighting that it is not where the content sits that makes it valuable, but the content itself. This raised the question of whether JISC could really be effective in certain areas where only HEIs could bid. In the following paragraph, it was noted that the two concepts mentioned – online academic and scholarly content, and research data – are not the same and linking them together was felt to underplay the importance of both. One respondent felt that 'Curriculum for Excellence' should be referenced in this section.

- 8.11. Finally, the reference in the last paragraph to the real challenge being 'for institutions to exploit ICT more effectively than their competitors' was felt to be contradictory given that the inference of much of the material before it is that collaboration is beneficial.

Changes in technology and infrastructure section

- 8.12. One respondent felt that this section should come first under 'Our World/Context' to start with a more positive tone, and show how JISC will further help HE and FE to change in step with new technology developments. The sections on funding and environments could then follow. The same respondent highlighted that to say that students' access to a very good ICT infrastructure is 'largely met' should be qualified with the word 'current'.
- 8.13. One HEFCE respondent was concerned that points on the benefits of social networking and open educational resources were as yet unsubstantiated, especially in learning and teaching. It was also suggested that the term 'social media' be used instead of 'social networking', the latter being a sub-set of the former.
- 8.14. One respondent questioned whether there was any evidence to support the statement that students often preferred mobile devices over laptops, suggesting that students would rather prefer different tools for different situations. A HEFCE respondent added that mobile devices had limitations and it was yet unclear whether they would be able to perform the same educational job as laptops.
- 8.15. Finally, relating to the last paragraph in this section, it seemed odd to one respondent that only SAML was mentioned in relation to access management given it is about the wider landscape and context. Other initiatives could be mentioned such as OpenID, Facebook Connect, Google's activities in this area, Information Cards, etc. It was felt by another respondent that there should also be a reference to identity management here, as necessary to underpin the implementation of effective access management (including consideration of how personal identity and corporate identities can co-exist and complement each other).

What this means for JISC

- 8.16. The first paragraph in this section mentions ICT offering 'new approaches through Web 3.0'. One respondent felt that the term 'Web 3.0' should not be used given many of those reading the strategy would perhaps not even know what Web 2.0 is, suggesting a definition of Web 2.0 is needed in the document.

Vision, Mission and Objectives

- 8.17. As a general note, one respondent felt that, given the central role played by JISC in the content and knowledge arenas, and the capacity it represents for innovation in library services, that a move towards a wider vision and mission that embraces information management as well as technology delivery might be appropriate.

Vision

- 8.18. HEFCE felt that the vision should start with the desired state (e.g. 'Universal access to appropriate technology....etc') rather than with the vehicle to achieve it (i.e. 'JISC's ambition is..') to place greater emphasis on what the vision is about. Similarly, another respondent commented that 'ambition' was not the

same as 'vision'. It was also felt that equality and diversity should be built in (e.g. '...everyone will have access to...whatever their background or abilities') to expand on the notion of universal access. The connection between the vision, mission and objectives and the design of learning space/use of space also needs to be clarified.

Mission

- 8.19. One respondent had a general issue with terminology in the mission statement suggesting that all of us are lifelong learners, from academics to administrators, and, as such, researchers are also a sub-set of 'learners'.
- 8.20. Another respondent remarked on the changes to JISC's mission statement over the last few years. They attributed this to the expansion of JISC's remit to include FE as well as HE, and a recognition of the work of JISC in a global context, but warned that such changes could be interpreted as 'mission creep'. The new 2010-2012 mission statement appears to set some specific and potentially misleading boundaries on what JISC is now setting out to do:
- "...to build a digital infrastructure" - is JISC really going to physically build the infrastructure? If what it really means is that it will *fund* the building of the infrastructure, is it only going to fund the digital part? If so, who will fund the user interface/analogue parts?
 - "...for researchers, academics, learners and administrators" - is it to be restricted to supporting just these categories of staff? Not librarians, MIS staff, senior management or other key contributors to JISC programmes?
 - "...to maximise their contribution to the knowledge economy" - is it restricting itself to supporting just this sector of the economy? What about manufacturing, agriculture, construction and the service industries? Will it no longer support skills development?

Objectives

- 8.21. It is felt that JISC's strength has been its ability to take risks and develop a long-term view and this needs to be preserved. However, JISC can do nothing by itself and one respondent felt that the strategic objectives should be modified to reflect this, e.g. "*help to improve the quality of learning and teaching and the student experience*".
- 8.22. A HEFCE respondent commented on the term 'student experience' in objective a) and whether this was a clear enough term to sufficiently put across what JISC is advocating.
- 8.23. Another HEFCE respondent felt that there are also points in the document which could invite the question of 'mission creep'. It is understood why the strategic objectives are ambitiously worded but it is less clear that, in terms of demonstrating successful outcomes, JISC will be able to show that it improved "the quality and productivity" of research, for example, rather than a more targeted aim to create the conditions for improvement, i.e. to enable institutions to improve the quality and productivity of academic research.

Research:

- 8.24. HEFCE questioned whether the wording of the objective on research was adequate to take into account 'excellence with impact' in this area. They observed, in terms of the Research/Knowledge Transfer interface, that direct interactions between HEIs and economic and social actors are strongest in the most research intensive institutions. There is an increasing emphasis on measuring impact of HE and if this continues it could have implications for

systems needs, i.e. that Customer Relationship Management (CRM) databases etc will need to be a lot more sophisticated. It will also have implications on how HEIs catalogue and store (and disseminate) research outputs by their staff, including outputs in non-standard forms. HEFCE will be working with JISC on the Research Excellence Framework (REF) although it is unclear at this stage to what extent that would be. This is therefore a clear case where JISC can make a direct contribution to one of HEFCE's higher strategic priorities.

Senior leadership engaging with technology:

8.25. The Leadership Foundation commented that the draft makes some very good references to the role of leadership in this area and the specific partnership with the Leadership Foundation. However, it is suggested that senior leadership is more explicitly built into the overall strategic objectives: by either adding a sixth objective based on enhancing the engagement of senior strategic leaders in the area of technology, or building it into the third objective on corporate and business systems.

8.26. One respondent suggesting adding 'highly valued to objective iv), i.e. 'provide *highly valued*, cost-effective and sustainable national services and resources'.

Investment Strategy

8.27. A HEFCE respondent questioned whether a body with a mission to build infrastructure should be investing in "creative approaches" to teaching and research rather than in helping to create the conditions in which such approaches will flourish.

8.28. Several respondents had questions around JISC funding such as how is core funding broken down, are funding streams secure going forward, will JISC need to find alternative funding sources in the future. This suggests that this is an area of concern across the sectors and some clarification may be needed on these issues.

Priority Investment Areas

8.29. One respondent suggested that further clarity might be needed on how JISC's investment is balanced or weighted, for example, in terms of relative duration/funding level of programmes and projects in each category. In addition, it was felt it would be useful to include a reference in the 'on the horizon' category to a review document which illustrates how previous investment over the last 2-5 years is now achieving more general take-up. Similarly, under 'beyond the horizon', a reference to evidence that investment during 1999-2005 has resulted in widespread benefits now.

8.30. Another respondent welcomed the commitment in the draft strategy to the spectrum of maturity, but felt that investment in the "here and now" (which they read to include services such as JANET, JISC Collections, UK Access Management Federation, etc) should also address "here and now" sector-wide ICT needs which don't transition through the traditional evolution from projects to services, e.g. integrated use by UK HEIs of the SITS Student Records System and the Blackboard VLE. They also suggested that a JISC entity working on behalf of the community may have more leverage with software suppliers when seeking UK HE-focused enhancements.

- 8.31. The same respondent felt that the current investment model in the draft strategy (3-10 years out, 2-5 years out, here and now) would not be able to effectively address new needs which are fundamentally useful rather than those which arise from technical innovation, but which may nevertheless be critical to offering an enhanced learning experience and more efficient business systems. It is perceived that even the 'here and now' services in the current model are based on needs that have transitioned from the far end of the spectrum.
- 8.32. It was felt that there needed to be a stronger connection between the investment areas and the investment strategy. Finally, one respondent felt that the reference to 'examples' throughout the tables should be replaced with 'exemplars' or 'case studies' so that they are more evidence-based.

Investment Area 1: Offering an enhanced learning experience

- 8.33. One HEFCE respondent felt that clarification is needed on what JISC will actually do in this area as it was unclear from the sentence 'JISC's advice will include the online experience, online support to students and on learning spaces'. A number of respondents mentioned the potential involvement of the Higher Education Academy (HEA) in the area of learning and teaching and how they might be involved in this activity with JISC.
- 8.34. A number of respondents felt that this area should include greater emphasis on research into the learning and teaching process, including learner behaviours and needs, in both the medium and long term. The emphasis would then be on enabling those processes. Universities and colleges need to be better informed about learner demands and needs, in terms of the technology they use and expect to use.
- 8.35. One respondent from the Learning and Teaching committee remarked that there needs to be further emphasis on the issues surrounding lifelong learning, e.g. workplace learning, supporting the integration of lifelong learning across school/FE/HE/work boundaries, and exploring how to break down those barriers between systems. It was suggested by another respondent that JISC should consider supporting learning resources where they sit *outside* a formal education establishment, as well as inside, e.g. Independent Research Organisations.
- 8.36. Again, a more immediate need for work on information literacy was highlighted in this area. It currently sits in 'on the horizon' work. It is feared that if this issue is not addressed sooner then the university will start to fall behind the 'cloud' and will begin to lose its position in the knowledge business. This type of cultural change will help to make universities more relevant going forward. One respondent, however, questioned whether JISC was intending to enter the 'information literacy' field or to support emerging work on 'digital literacy'.
- 8.37. Similarly, it was felt that curriculum design and delivery should sit in the 'here and now' activities, given that much research and evidence indicates that embedding of any technology within the curriculum is the only effective way for it be used.

Investment Area 2: More productive, efficient and globally recognised research

- 8.38. HEFCE felt that JISC should not be aiming to support an increase in the *quantity* of research in the UK. HEFCE's priority is higher *quality* research so that it can achieve the best returns on its investment. HEFCE look to JISC to help create the conditions in which new approaches leading to higher quality,

and to more outcomes of high quality, can flourish. This feeling was echoed by other respondents. There is also a need for a reference here to understanding and meeting researchers' needs. Supporting quality measurement is a secondary aim and should be less prominent.

- 8.39. Secondly, JISC has a good record in investing in access to outputs and materials, but taking a leading role in "investing in collections" as such may raise questions about apparent 'mission creep'. This point may therefore need to be clarified. Alongside this, a respondent from the Learning and Teaching committee felt that JISC could do some work to support broader licensing agreements for online journals, e.g. negotiating on behalf of the sector for good terms with publishers. It is perceived that current licenses often inhibit sharing across cohorts, where the location can be an HEI or a partner FE college.
- 8.40. One international respondent felt that the emphasis should be on the need for development of 'light' standards that encourage flexibility and interoperability, rather than rigid compliance standards, in terms of sharing of research data. Aligned with this could be some view of how JISC sees the use of standards intersecting with the shift to open, commons and copyright-free publication. Finally, one respondent felt that 'on the horizon' work to 'develop a community of support for Virtual Research Environments' should be strengthened and broadened by instead 'developing collaborative environments for research'.

Investment Area 3: More efficient business systems

- 8.41. One respondent from the Learning and Teaching committee felt that some of the most challenging areas for institutions are where administrative systems interact with learning and teaching. These issues are currently separated in the draft strategy but in some ways institutions will need to use administrative systems to underpin their whole engagement with learners, especially when they are remote.
- 8.42. A number of respondents wanted to see a greater emphasis on Identity Management, particularly in the 'here and now' under 'advice on the strategic management of technology'. This is felt to be a big strategic issue for institutions that they may not yet realise. Another significant issue is that of energy efficiency in the longer term which it is felt should also be covered by the 'beyond the horizon' work. JISC's work on 'scenario planning' could be used here to advise institutions and government on the effects this would have on the delivery of their strategic priorities. This would strengthen the proposed work on new models for institutional provision.
- 8.43. Process improvement is a new issue for the sector but an important one and, as such, should be included in this area as an opportunity for JISC to make a significant difference.

Investment Area 4: Cost-effective shared national services and resources

- 8.44. A HEFCE respondent was slightly concerned that the mention of the Open Educational Resources Programme helping to establish priorities was perhaps over bold given the outcomes of the pilots were not yet known. An HE respondent remarked that investment in this area needs to be carefully considered and managed given the disparate activity (type and magnitude) of HEIs. In addition, provision of resources should go beyond information resources to include genuine learning resources.

- 8.45. A small number of respondents felt that JISC could provide real leadership in the development of a national scholarly content infrastructure for the purpose of more appropriately supporting teaching, learning and research, remarking that there is a particular need for this.
- 8.46. One international respondent questioned the terminology 'Information Environment' suggesting that this concept does not translate beyond the UK.

How JISC Invests

Services

- 8.47. It was felt that the BUFVC should be mentioned here.

Innovation programmes

- 8.48. One respondent remarked that the 'beacon' model of change - implied by the sentence "This funding allows them to demonstrate effective practice to other institutions" - may not be a valid one in HE, suggesting that it hadn't worked before.

Investment process

- 8.49. An international respondent agreed that scaling up across an education sector is a significant challenge and suggested that more could therefore be made of the structured communications strategy in the document.

Maximising investment – understanding user needs and changing technology

- 8.50. One respondent felt that the last sentence on exploration of informal content is a really important one but is slightly lost and comes across as somewhat of an afterthought. This paragraph addresses issues of real cultural change in terms of a move away from institutional provision to user provision, and should therefore be included in the 'here and now' activities. Further clarification of the term 'user-owned environments' is also needed.

The innovation lifecycle

- 8.51. It was felt that the second paragraph should be much more of a commitment from JISC to be a leader in adoption and implementation, rather than an 'explorer' capturing trends. The same respondent felt that an alternative term should be found for 'adoption community' in the seventh paragraph.
- 8.52. An international respondent remarked that the use of the terms 'radical' and 'semi-radical' relating to JISC's investment portfolio may 'scare' some stakeholders and this could be a danger.
- 8.53. An FE respondent commented that institutions involved in JISC project work gained benefits on many levels by direct involvement with JISC activities and so the intention to reduce 'the number of projects that it funds', mentioned in the eighth paragraph, was not perhaps desirable.
- 8.54. One HE respondent felt that there should be an acknowledgement in this section that institutions are taking significant risks in innovation, and also that varying levels of risk are acceptable for different systems/developments. Managing the risk spectrum is a crucial part of institutional ICT management.
- 8.55. Finally, one respondent commented that this section did not add very much to the strategy overall, and that there is a danger that JISC is seen to commit to a particular innovation framework that may prove burdensome during the lifetime

of the strategy.

Partners

8.56. One respondent suggested that the strategy could incorporate a paragraph from JISC's key partners on what their relationship with JISC means, from their perspective. One JISC partner who responded felt that further clarity on JISC's goals in specific areas (e.g. digitisation), and more partnership working at a strategic level, would help them to work more effectively with JISC. Generally, it was felt that it would be useful for JISC to state more clearly how JISC works with others and how these groups are important.

Measuring success

8.57. It was felt by one respondent that more attention could be given in this section to how improvements that JISC has made can be identified and measured: things that would not have happened without JISC. Such figures might usefully be fed as primary measures into any future JISC value for money studies.

Digital footprint

8.58. Most students will be approaching higher and further education with an established digital footprint and online presence from both formal settings (such as online records of achievements) and social environments such as Facebook and Myspace. The strategy could usefully make reference to the issues surrounding this area such as how institutions should interact with these 'spaces' to produce an effective educational experience, and the need for institutions to review their current service delivery.

8.59. Digital footprint also affects a range of other areas. It is important in the institutional repository debate in trying to establish author identifiers across journal platforms, and is increasingly important from a preservation point of view: where are valuable academic contributions to blogs and wikis being captured and preserved?

General

8.60. One respondent felt that removing barriers is a general issue that JISC needs to address. They cited an example where they were unable to take part in a JISC online seminar run by the Midlands RSC because the college was situated in the wrong region.

8.61. It was highlighted that further clarity was needed when using the term 'administrative systems' (student records? HR? Finance? All of them?), especially when the terms 'corporate and business systems' and 'business systems' were used as well.

8.62. Other general comments on elements in the strategy include:

- A clear statement on the future of JANET provision within the overall JISC strategy would be welcome, given possible phasing out of Regional Network Operators (RNOs) – coupled with a need for a secondary link to secure resilience;
- Lessen the focus on individual technology solutions in some areas (e.g. VLE, SOA)-there are other technologies that could improve online learning;
- Activity to forecast technology trends, as a trusted independent authority;
- Procurement of a shared firewall service for institutions rather than individual institutional procurement and support;

- Better communication and collaboration with the Celtic Nations to promote a truly UK-wide endeavour;
- A stronger sense of how JISC intends to establish itself as a leader that has serious influence beyond the formal HE and FE sectors;
- A definition of Web 3.0 technology;
- Greater support for pedagogic initiatives that involve a change management element to get maximum benefit in terms of impact;
- JISC should be less prescriptive about the licensing and platform requirements for software developed in a project;
- JISC should play a leading role in important national initiatives, e.g. in taking forward the UK approach to the European Union's i2010 initiative to develop national digitisation strategies;
- The strategy should avoid assumptions about the digital literacy of students;
- JISC should recognise the necessity of local support for institutions to effectively exploit existing and developing technologies;
- Greater focus on how JISC engages with its stakeholders (i.e. institutions);
- More explicit mention of geo-enabling given the increasing pervasiveness of geospatially referenced information and geospatial data.

JISC Executive
9 October 2009

Annex A: Institutions and organisations who responded

Higher Education

University of Aberdeen	University of Leicester
Aberystwyth University	Loughborough University
Arts University College at Bournemouth	Newcastle University
Bangor University	University of Northampton
Bishop Grosseteste University College	Norwich University College of the Arts
University of Bristol	University of Nottingham
Brunel University	Nottingham Trent University
Coventry University	University of Plymouth
Cranfield University	Queen Margaret University Edinburgh
University of Cumbria and JLT Member	University of Reading and JLT Member
Edinburgh Napier University	Roehampton University
Harper Adams University College	University of St Andrews
University of Hertfordshire	St Mary's University College Twickenham
University of Huddersfield	University of Southampton
Imperial College London	University of Stirling
University of Leeds	University of the West of England
Leeds Metropolitan University	

Further Education

Aberdeen College	James Watt College
Ashton Sixth Form College	John Wheatley College
Banff and Buchan College	Lowestoft College
Basingstoke College of Technology	Oldham College
Blackpool & The Fylde College	Scottish Agricultural College
Bournemouth and Poole College	Southport College
Cardonald College	South Thames College
Carnegie College	Stow College
City of Bristol College	West Lothian College
Coleg Llandrillo	Wiltshire College
Dumfries and Galloway College	Wirral Met College
Fareham College	Yeovil College

Other

Association for Learning Technology (ALT)	Lifelong Learning UK
Becta	National Library of Scotland
British Library	New Zealand Ministry of Education
British Universities Film & Video Council (BUFVC)	Research Libraries UK
e-College.ac Ltd	Russell Group
EDINA	Science & Technology Facilities Council (STFC)
GuildHE	SCONUL
Higher Education Funding Council for England (HEFCE)	Scottish Library & Information Council (SLIC)
Higher Education Funding Council for Wales (HEFCW)	The Leadership Foundation
Individual	The National Archives
Individual	UCAS
Individual	UK Heads of e-Learning Forum
UCISA	Universities Scotland
Key Perspectives Ltd	

Annex B: 2009 National Student Survey - relevant responses for JISC

In the 2009 National Student Survey, the questions were grouped into 8 areas:

- The teaching on my course;
- Assessment and feedback;
- Academic support;
- Organisation and management;
- Learning resources;
- Personal development;
- Overall satisfaction;
- NHS practice placements.

Teaching ranks quite highly, between 83% - 86%. Across all countries in the UK, the areas of Assessment and feedback, Academic support, and Organisation and management were the lowest scoring areas. The relevant questions for JISC in those areas are:

Assessment and feedback (the lowest scoring part of the survey):

6. Assessment arrangements and marking have been fair - satisfaction in this area across the UK is *fairly* good, around the low to mid 70s.

7. Feedback on my work has been prompt - this ranges from 53% - 58% across the UK and is one of the overall lowest scoring questions in the survey, along with Q9. "Feedback on my work has helped me clarify things I did not understand".

The issue of providing timely and effective feedback, and e-assessment issues more generally came through in a number of the responses to the JISC draft strategy and could be an important focus for JISC's work in this area. Some of JISC's current e-learning work could help to improve this score, e.g. the "Transforming Curriculum Delivery through technology" Programme includes a number of projects addressing feedback and e-assessment. There are also JISC publication and Infokits which could help in this area.

Academic support:

This area does not fair too badly in terms of score, around the mid 70s, but is at the lower end of the overall scores. Questions include:

10. I have received sufficient advice and support with my studies - around 73% agree

11. I have been able to contact staff when I needed to - around 83% agree

12. Good advice was available when I needed to make study choices - the lowest scoring question, around 70% agree

There could be a role here for JISC in improving mechanisms for communication between students and teachers/staff, e.g. social networking tools, Customer Relationship Management systems, and this was another area that came through in the strategy responses.

Organisation and management:

14. Any changes in the course or teaching have been communicated effectively - averages in the low 70s

15. The course is well organised and is running smoothly - averages in the low 70s

Again, there could be a role here for JISC in improving mechanisms for communication between students and teachers/staff.

The other relevant area for JISC is that of Learning resources which, across the UK, scored fourth overall behind NHS practice placements, teaching and overall satisfaction. The relevant questions are:

16. The library resources and services are good enough for my needs - this averaged out across the UK at 81% agreeing, which is quite a good overall score. This is a tricky one as it raises the question of whether students know what other resources are out there that they may not have access to and that could improve their learning experience. JISC's work on Open Education Resources, open access, repositories, shared services, digitisation etc could help to push this score up further.

17. I have been able to access general IT resources when I needed to - this averaged out across the UK at 87% agreeing which is a good overall score. The issue of 24/7 and remote access, as well as having a robust infrastructure, came through strongly in the strategy responses and so work in these areas could help to maintain and possibly increase this score.

There were no particular stark regional differences in the results where JISC would need to focus our efforts.